Question 1a of 25 (2 Identifying Polynomials 156758)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 3

Question: Which of the following are polynomial functions? *Check all that apply.*

Correct Answers:

	Choice
A.	$F(x) = 2x^{-2} + 5x - 3$
***B.**	$F(x) = 3x^3 - 9$
***C.**	$F(x) = \frac{3}{5}x^4 - 18x^3 + x^2 - 10x + 3.5$
D.	$F(x) = 5.3x^2 + 3x - \frac{2}{x} + 6$
E.	$F(x) = -x^3 + 5x^2 + 7\sqrt{x} - 1$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: $F(x) = 3x^3 - 9$ and $F(x) = \frac{3}{5}x^4 - 18x^3 + x^2 - 10x + 3.5$.

Question 1b of 25 (2 Identifying Polynomials 246538)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 3

Question: Which of the following are polynomial functions? *Check all that apply.*

Correct Answers:

	Choice
***A.**	$F(x) = 4x^4 - 10$
B.	$F(x) = -x^3 + 5x^2 + 7\sqrt{x} - 1$
C.	$F(x) = \frac{3}{5}x^4 - 18x^2 + 5 - \frac{10}{x^2}$
***D.**	$F(x) = 5.3x^2 + 3x - 2$
E.	$F(x) = x^{-2} + 15x - 3$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: $F(x) = 4x^4 - 10$ and $F(x) = 5.3x^2 + 3x - 2$.

Question 1c of 25 (2 Identifying Polynomials 246540)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 3

Question: Which of the following are polynomial functions? *Check all that apply.*

Correct Answers:

	Choice
***A.**	$F(x) = 2x^2 + 5x - 3$
B.	$F(x) = 3x^{-3} - 19$
***C.**	$F(x) = \frac{3}{5}x^4 - 18x^3 + x^2 - 10x + 3.5$
D.	$F(x) = -x^3 + \sqrt{-x}$
***E.**	$F(x) = -x^3 + 5x^2 + 7x - 1$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • $F(x) = 2x^2 + 5x - 3$ • $F(x) = \frac{3}{5}x^4 - 18x^3 + x^2 - 10x + 3.5$ • $F(x) = -x^3 + 5x^2 + 7x - 1$.

Question 2a of 25 (2 Identifying Polynomials 156762)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 3

Question: Which term prevents the following expression from being considered polynomial?

$$F(x) = \frac{1}{2}x^4 - 5x^{-3} - \sqrt{7}x^2 + 1.4x + 21$$

	Choice	Feedback
A.	$\frac{1}{2}x^4$	
***B.**	$-5x^{-3}$	
C.	$-\sqrt{7}x^2$	
D.	$1.4x$	

Global Incorrect Feedback

The correct answer is: $-5x^{-3}$.

Question 2b of 25 (2 Identifying Polynomials 246541)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 3

Question: Which term prevents the following expression from being considered polynomial?

$$F(x) = \frac{1}{\sqrt{2}}x^4 - \frac{1}{\sqrt{5}}x^3 - 7x^{-2} + 1.4x + 21$$

	Choice	Feedback
A.	$\frac{1}{\sqrt{2}}x^4$	
B.	$-\frac{1}{\sqrt{5}}x^3$	
***C.**	$-7x^{-2}$	Correct!
D.	$1.4x$	
E.	21	

Global Incorrect Feedback
The correct answer is: $-7x^{-2}$.

Question 2c of 25 (2 Identifying Polynomials 246543)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 3

Question: Which term prevents the following expression from being considered polynomial?

$$F(x) = \frac{1}{2}x^4 - 5x^3 - \sqrt{7}x^2 + \frac{1.4}{x} + 21$$

	Choice	Feedback
A.	$\frac{1}{2}x^4$	
B.	$-5x^{-3}$	
C.	$-\sqrt{7}x^2$	
***D.**	$\frac{1.4}{x}$	Correct!
E.	21	

Global Incorrect Feedback
The correct answer is: $\frac{1.4}{x}$.

Question 3a of 25 (3 Evaluating Polynomial Functions 329404)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: 42

Question: For the polynomial below, find *F*(3).

$$F(x) = 2x^3 - x^2 - 4x + 9$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 42.

Question 3b of 25 (3 Evaluating Polynomial Functions 329406)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: 214

Question: For the polynomial below, find *F*(5).

$$F(x) = 2x^3 - x^2 - 4x + 9$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 214.

Question 3c of 25 (3 Evaluating Polynomial Functions 329407)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: 105

Question: For the polynomial below, find $F(4)$.

$$F(x) = 2x^3 - x^2 - 4x + 9$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 105.

Question 4a of 25 (3 Evaluating Polynomial Functions 329405)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: -23

Question: For the polynomial below, find *F*(-2).

$$F(x) = -4x^2 + 3x - 1$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: -23.

Question 4b of 25 (3 Evaluating Polynomial Functions 329408)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: -46

Question: For the polynomial below, find *F*(-3).

$$F(x) = -4x^2 + 3x - 1$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: -46.

Question 4c of 25 (3 Evaluating Polynomial Functions 329409)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: -77

Question: For the polynomial below, find *F*(-4).

$$F(x) = -4x^2 + 3x - 1$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: -77.

Question 5a of 25 (2 Identifying Polynomials 156790)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: cubic, third-degree, third degree, cubic polynomial, third-degree polynomial, third degree polynomial

Question: What kind of polynomial is the one shown below?

Hint: Think in terms of degree.

$$F(x) = 15x^3 - 2.5x^2 + \frac{3}{5}x + 3$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: Cubic.

Question 5b of 25 (2 Identifying Polynomials 246555)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: quartic, fourth-degree, fourth degree, quartic polynomial, fourth-degree polynomial, fourth degree polynomial

Question: What kind of polynomial is the one shown below? *Hint: Think in terms of degree.*

$$F(x) = 15x^4 - 2.5x^3 + \frac{3}{5}x^2 + 3x + 1$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: Quartic.

Question 5c of 25 (2 Identifying Polynomials 246556)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: quadratic, second-degree, second degree, quadratic polynomial, second-degree polynomial, second degree polynomial

Question: What kind of polynomial is the one shown below? *Hint: Think in terms of degree.*

$$F(x) = 15x^2 - 2.5x + 3$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: Quadratic.

Question 6a of 25 (2 Identifying Polynomials 156799)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 3

Question: In the polynomial below, what is the leading coefficient?

$$F(x) = \frac{1}{2}x^2 + 8 - 5x^3 - 19x$$

	Choice	Feedback
A.	$\frac{1}{2}$	
B.	8	
***C.**	-5	Correct!
D.	-19	
E.	2	

Global Incorrect Feedback
The correct answer is: -5.

Question 6b of 25 (2 Identifying Polynomials 246557)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 3

Question: In the polynomial below, what is the leading coefficient?

$$F(x) = \frac{1}{3}x^3 + 8x^4 - 5x - 19x^2$$

	Choice	Feedback
A.	$\frac{1}{3}$	
***B.**	8	Correct!
C.	-5	
D.	-19	
E.	2	

Global Incorrect Feedback
The correct answer is: 8.

Question 6c of 25 (2 Identifying Polynomials 246558)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 3

Question: In the polynomial below, what is the leading coefficient?

$$F(x) = \frac{1}{4}x^5 + 8x - 5x^4 - 19$$

	Choice	Feedback
***A.**	$\frac{1}{4}$	Correct!
B.	8	
C.	-5	
D.	-19	
E.	2	

Global Incorrect Feedback
The correct answer is: $\frac{1}{4}$.

Question 7a of 25 (3 Factoring Polynomials and Find Roots 156812)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: (x - 8)(x + 5), (x+5)(x-8), (x-8)(5+x), (5+x)(x-8), (x+5)(-8+x), (-8+x)(x+5), (-8+x)(5+x), (5+x)(-8+x)

Question: Factor the polynomial.

$$x^2 - 3x - 40$$

Attempt	Incorrect Feedback

1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: $(x - 8)(x + 5)$.

Question 7b of 25 (3 Factoring Polynomials and Find Roots 246559)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: (x - 7)(x + 6), (x+6)(x-7), (x-7)(6+x), (6+x)(x-7), (x+6)(-7+x), (-7+x)(x+6), (-7+x)(6+x), (6+x)(-7+x)

Question: Factor the polynomial.

$$x^2 - x - 42$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: $(x - 7)(x + 6)$.

Question 7c of 25 (3 Factoring Polynomials and Find Roots 246560)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: (x - 9)(x + 4), (x+4)(x-9), (x-9)(4+x), (4+x)(x-9), (x+4)(-9+x), (-9+x)(x+4), (-9+x)(4+x), (4+x)(-9+x)

Question: Factor the polynomial.

$x^2 - 5x - 36$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: $(x - 9)(x + 4)$.

Question 8a of 25 (3 Factoring Polynomials and Find Roots 156813)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: (2x + 5)(2x - 5), (2x-5)(2x+5), (5+2x)(2x-5), (2x-5)(5+2x), (-5+2x)(2x+5), (2x+5)(-5+2x), (-5+2x)(5+2x), (5+2x)(-5+2x)

Question: Factor the polynomial.

$4x^2 - 25$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: (2*x* + 5)(2*x* - 5).

Question 8b of 25 (3 Factoring Polynomials and Find Roots 246561)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: (3x + 4)(3x - 4), (3x-4)(3x+4), (4+3x)(3x-4), (3x-4)(4+3x), (-4+3x)(3x+4), (3x+4)(-4+3x), (-4+3x)(4+3x), (4+3x)(-4+3x)

Question: Factor the polynomial.

$9x^2 - 16$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: (3*x* + 4)(3*x* - 4).

Question 8c of 25 (3 Factoring Polynomials and Find Roots 246562)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: (4x + 3)(4x - 3), (4x-3)(4x+3), (3+4x)(4x-3), (4x-3)(3+4x), (-3+4x)(4x+3), (4x+3)(-3+4x), (-3+4x)(3+4x), (3+4x)(-3+4x)

Question: Factor the polynomial.

$16x^2 - 9$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: (4*x* + 3)(4*x* - 3).

Question 9a of 25 (3 Factoring Polynomials and Find Roots 329411)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: -7

Question: What is the value of the discriminant of the polynomial below?

$$2x^2 + 5x + 4$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: -7.

Question 9b of 25 (3 Factoring Polynomials and Find Roots 329417)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: -24

Question: What is the value of the discriminant of the polynomial below?

$$3x^2 + 6x + 5$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	he correct answer is: -24.

Question 9c of 25 (3 Factoring Polynomials and Find Roots 329418)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: -15

Question: What is the value of the discriminant of the polynomial below?

$$4x^2 + 7x + 4$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: -15.

Question 10a of 25 (2 Factoring Polynomials, Finding Roots, and Graphing 329412)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: 2

Question: How many times does the graph of the function below intersect or touch the *x*-axis?

$$y = -3x^2 + x + 4$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 2.

Question 10b of 25 (2 Factoring Polynomials, Finding Roots, and Graphing 329415)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: 2

Question: How many times does the graph of the function below intersect or touch the *x*-axis?

$$y = -x^2 + x + 6$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 2.

Question 10c of 25 (2 Factoring Polynomials, Finding Roots, and Graphing 329416)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: 2

Question: How many times does the graph of the function below intersect or touch the *x*-axis?

$$y = -2x^2 + 3x + 5$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback

	The correct answer is: 2.

Question 11a of 25 (3 Factoring Polynomials and Finding Roots 156824)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 3

Question: Which of the following are roots of the polynomial? *Check all that apply.*

$$F(x) = 2x^2 - 9x + 4$$

Correct Answers:

	Choice
A.	$\frac{9+\sqrt{7}}{4}$
B.	$\frac{9-\sqrt{7}}{4}$
C.	$\frac{-9-\sqrt{7}}{4}$
D.	$\frac{-9+\sqrt{7}}{4}$
***E.**	4
***F.**	$\frac{1}{2}$

Attempt	Incorrect Feedback

1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: 4 and $\frac{1}{2}$.

Question 11b of 25 (3 Factoring Polynomials and Finding Roots 326404)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 3

Question: Which of the following are roots of the polynomial? *Check all that apply.*

$$F(x) = 3x^2 - 13x + 4$$

Correct Answers:

	Choice
A.	$\frac{11+\sqrt{7}}{6}$
B.	$\frac{-11-\sqrt{7}}{6}$
C.	$\frac{11-\sqrt{7}}{6}$

***D.**	$\frac{1}{3}$
E.	$\frac{-11+\sqrt{7}}{6}$
***F.**	4

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: $\frac{1}{3}$ and 4.

Question 11c of 25 (3 Factoring Polynomials and Finding Roots 246568)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 3

Question: Which of the following are roots of the polynomial? *Check all that apply.*

$$F(x) = 3x^2 - 7x + 2$$

Correct Answers:

	Choice

A.	$\frac{9+\sqrt{7}}{4}$
B.	$\frac{9-\sqrt{7}}{4}$
C.	$\frac{-9-\sqrt{7}}{4}$
D.	$\frac{-9+\sqrt{7}}{4}$
***E.**	2
***F.**	$\frac{1}{3}$

Attempt	**Incorrect Feedback**
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: 2 and $\frac{1}{3}$.

Question 12a of 25 (2 Intro to Imaginary Numbers 156830)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: 11i

Question: $\sqrt{-121}$ = _____.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 11*i*.

Question 12b of 25 (2 Intro to Imaginary Numbers 246569)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: 12i

Question: $\sqrt{-144}$ = _____.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 12*i*.

Question 12c of 25 (2 Intro to Imaginary Numbers 326424)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: 13i

Question: $\sqrt{-169}$ = _____.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 13*i*.

Question 13a of 25 (2 Intro to Imaginary Numbers 156832)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 3

Question: i^{37} = _____.

	Choice	Feedback
***A.**	*i*	Correct!
B.	-1	
C.	-*i*	
D.	1	

Global Incorrect Feedback
The correct answer is: *i*.

Question 13b of 25 (2 Intro to Imaginary Numbers 246576)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 3

Question: i^{38} = _____.

	Choice	Feedback
A.	*i*	
***B.**	-1	Correct!
C.	-*i*	
D.	1	

Global Incorrect Feedback
The correct answer is: -1.

Question 13c of 25 (2 Intro to Imaginary Numbers 246577)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 3

Question: i^{39} = _____.

	Choice	Feedback
A.	*i*	
B.	-1	
***C.**	*-i*	Correct!
D.	1	

Global Incorrect Feedback
The correct answer is: *-i*.

Question 14a of 25 (3 Operation on Complex Numbers 156833)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: 9 + i, i + 9

Question: Add the complex numbers.

(3 + 2*i*) + (6 - *i*)

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 9 + *i*.

Question 14b of 25 (3 Operation on Complex Numbers 246578)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: 8 + 2i, 2i + 8

Question: Add the complex numbers.

(4 + 3*i*) + (4 - 1*i*)

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 8 + 2*i*.

Question 14c of 25 (3 Operation on Complex Numbers 246579)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: 7 + 2i, 2i + 7

Question: Add the complex numbers.

(3 + 4*i*) + (4 - 2*i*)

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 7 + 2*i*.

Question 15a of 25 (3 Operations on Complex Numbers 156845)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: 3 + 2i, 2i + 3

Question: Subtract the complex numbers.

(4 - 3*i*) - (1 - 5*i*)

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 3 + 2*i*.

Question 15b of 25 (3 Operations on Complex Numbers 246580)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: 4 + i, i + 4

Question: Subtract the complex numbers.

(6 - 4*i*) - (2 - 5*i*)

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 4 + *i*.

Question 15c of 25 (3 Operations on Complex Numbers 246584)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: 5 + 4i, 4i + 5

Question: Subtract the complex numbers.

(6 - 1*i*) - (1 - 5*i*)

Attempt	**Incorrect Feedback**
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 5 + 4*i*.

Question 16a of 25 (3 Operations on Complex Numbers 156847)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: 12 - i, -i + 12

Question: Multiply the complex numbers.

$$(5 + 2i)(2 - i)$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 12 - *i*.

Question 16b of 25 (3 Operations on Complex Numbers 246585)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: 11 + 2i, 2i + 11

Question: Multiply the complex numbers.

(4 + 3*i*)(2 - *i*)

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 11 + 2*i*.

Question 16c of 25 (3 Operations on Complex Numbers 246586)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: 22 + 6i, 6i + 22

Question: Multiply the complex numbers.

(6 + 4*i*)(3 - *i*)

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback

	The correct answer is: $22 + 6i$.

Question 17a of 25 (3 Operations on Complex Numbers 156848)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 3

Question: Divide the complex numbers.

$$\frac{2-3i}{1+2i}$$

	Choice	Feedback
A.	$\frac{4+2i}{-3}$	
B.	$\frac{6-i}{2}$	
***C.**	$\frac{-4-7i}{5}$	Correct!
D.	$\frac{7-4i}{5}$	

Global Incorrect Feedback
The correct answer is: $\frac{-4-7i}{5}$.

Question 17b of 25 (3 Operations on Complex Numbers 246587)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 3

Question: Divide the complex numbers.

$$\frac{2+3i}{1+2i}$$

	Choice	Feedback
***A.**	$\frac{8-i}{5}$	Correct!
B.	$\frac{-4-i}{5}$	
C.	$\frac{8-i}{3}$	
D.	$\frac{-4-i}{3}$	

Global Incorrect Feedback
The correct answer is: $\frac{8-i}{5}$.

Question 17c of 25 (3 Operations on Complex Numbers 246588)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 3

Question: Divide the complex numbers.

$$\frac{1+3i}{2+2i}$$

	Choice	Feedback
A.	$\frac{4+8i}{8}$	
B.	$\frac{-4+4i}{8}$	
C.	$\frac{8-4i}{8}$	
***D.**	$\frac{8+4i}{8}$	Correct!

Global Incorrect Feedback
The correct answer is: $\frac{8+4i}{8}$.

Question 18a of 25 (2 Operations on Complex Numbers 156869)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: denominator, divisor

Question: When dividing complex numbers, the first step is to mutliply top and bottom by the complex

conjugate of the _____.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: denominator.

Question 18b of 25 (2 Operations on Complex Numbers 246589)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: conjugate

Question: When dividing complex numbers, the first step is to multiply top and bottom by the complex _____ of the denominator.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: conjugate.

Question 18c of 25 (2 Operations on Complex Numbers 246590)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: complex

Question: When dividing complex numbers, the first step is to multiply top and bottom by the _____ conjugate of the denominator.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: complex.

Question 19a of 25 (3 Factoring and Finding Roots of Polynomials 156870)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 3

Question: The polynomial $(x - 2)$ is a factor of the polynomial $F(x) = 3x^2 - 8x + 2$.

	Choice	Feedback

A.	True	
***B.**	False	Correct!

Global Incorrect Feedback
The correct answer is: False.

Question 19b of 25 (3 Factoring and Finding Roots of Polynomials 246591)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 3

Question: The polynomial $(x - 2)$ is a factor of the polynomial $F(x) = 4x^2 - 6x - 4$.

	Choice	**Feedback**
***A.**	True	Correct!
B.	False	

Global Incorrect Feedback
The correct answer is: True.

Question 19c of 25 (3 Factoring and Finding Roots of Polynomials 246592)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 3

Question: The polynomial $(x - 2)$ is a factor of the polynomial $F(x) = 5x^2 - 6x + 4$.

	Choice	Feedback
A.	True	
***B.**	False	Correct!

Global Incorrect Feedback
The correct answer is: False.

Question 20a of 25 (3 Dividing Polynomials 156872)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 3

Question: What is the quotient when $(x + 3)$ is divided into the polynomial $F(x) = 2x^2 + x - 15$?

	Choice	Feedback
A.	$2x$ - 3 with a remainder of 5	
B.	$x + 3$ with a remainder of -2	
C.	$2x + 1$ with no remainder	
***D.**	$2x$ - 5 with no remainder	Correct!

Global Incorrect Feedback
The correct answer is: $2x$ - 5 with no remainder.

Question 20b of 25 (3 Dividing Polynomials 246594)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 3

Question: What is the quotient when $(x + 2)$ is divided into the polynomial $F(x) = 2x^2 - 2x - 12$?

	Choice	Feedback
A.	$2x$ - 3 with a remainder of 5	
B.	x + 3 with a remainder of -2	
***C.**	$2x$ - 6 with no remainder	Correct!
D.	$2x$ - 5 with no remainder	

Global Incorrect Feedback
The correct answer is: $2x$ - 6 with no remainder.

Question 20c of 25 (3 Dividing Polynomials 246595)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 3

Question: What is the quotient when $(x + 3)$ is divided into the polynomial $F(x) = 2x^2 + 3x - 9$?

	Choice	Feedback
	$2x$ - 3 with no	

***A.**	$2x - 3$ with no remainder	Correct!
B.	$x + 3$ with a remainder of -2	
C.	$2x + 1$ with no remainder	
D.	$2x - 5$ with no remainder	

Global Incorrect Feedback
The correct answer is: $2x - 3$ with no remainder .

Question 21a of 25 (3 Dividing Polynomials 329413)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: 9

Question: What is the missing number in the synthetic division problem below?

$$\begin{array}{r|cccc} 2 & 3 & -2 & 1 & 2 \\ & & 6 & 8 & 18 \\ \hline & 3 & 4 & ? & 20 \end{array}$$

Attempt	**Incorrect Feedback**
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 9.

Question 21b of 25 (3 Dividing Polynomials 329419)

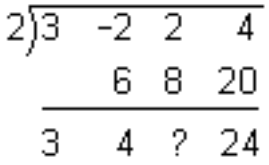
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: 10

Question: What is the missing number in the synthetic division problem below?



Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 10.

Question 21c of 25 (3 Dividing Polynomials 329420)

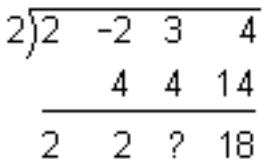
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: 7

Question: What is the missing number in the synthetic division problem below?



Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 7.

Question 22a of 25 (3 Dividing Polynomials 329414)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: -3

Question: What is the remainder when 3 is synthetically divided into the polynomial $-x^2 + 5x - 9$?

Attempt	Incorrect Feedback

1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: -3.

Question 22b of 25 (3 Dividing Polynomials 329421)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: -6

Question: What is the remainder when 3 is synthetically divided into the polynomial $-2x^2 + 7x - 9$?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: -6.

Question 22c of 25 (3 Dividing Polynomials 329423)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 3

Correct Answer: -7

Question: What is the remainder when 2 is synthetically divided into the polynomial $-3x^2 + 7x - 9$?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: -7.

Question 23a of 25 (2 Factoring and Finding Roots of Polynomials 156876)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 3

Question: Which of the following are roots of the polynomial below? *Check all that apply.*

$$F(x) = 2x^3 - 5x^2 + 2x + 1$$

Correct Answers:

	Choice
*A.	$\frac{3 + \sqrt{17}}{4}$

B.	$\frac{5 - \sqrt{1}}{6}$
***C.**	$\frac{3 - \sqrt{17}}{4}$
D.	$\frac{5 + \sqrt{1}}{6}$
***E.**	1

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: $\frac{3 + \sqrt{17}}{4}$, $\frac{3 - \sqrt{17}}{4}$, and 1.

Question 23b of 25 (2 Factoring and Finding Roots of Polynomials 246601)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 3

Question: Which of the following are roots of the polynomial below? *Check all that apply.*

$$F(x) = x^3 - 3x^2 + 2$$

Correct Answers:

	Choice
A.	$\frac{3+\sqrt{17}}{4}$
***B.**	$\frac{2+\sqrt{12}}{2}$
C.	$\frac{3-\sqrt{17}}{4}$
***D.**	$\frac{2-\sqrt{12}}{2}$
***E.**	1

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: $\frac{2+\sqrt{12}}{2}$, $\frac{2-\sqrt{12}}{2}$, and 1.

Question 23c of 25 (2 Factoring and Finding Roots of Polynomials 246602)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 3

Question: Which of the following are roots of the polynomial below? *Check all that apply.*

$$F(x) = 2x^3 - x^2 - 9x + 6$$

Correct Answers:

	Choice
A.	$\frac{9 - \sqrt{55}}{4}$
***B.**	$\frac{-3 + \sqrt{33}}{4}$
***C.**	$\frac{-3 - \sqrt{33}}{4}$
D.	$\frac{9 + \sqrt{55}}{4}$
***E.**	2

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: $\frac{-3 + \sqrt{33}}{4}$, $\frac{-3 - \sqrt{33}}{4}$,

	and 2.

Question 24a of 25 (2 Factoring and Finding Roots of Polynomials 156917)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: (x + 1)(x + 2i)(x - 2i), (x+1)(2i+x)(x-2i), (1+x)(x+2i)(x-2i), (1+x)(2i+x)(x-2i), (x+2i)(x-2i)(x+1), (2i+x)(x-2i)(x+1), (x+2i)(x-2i)(1+x), (2i+x)(x-2i)(1+x), (x-2i)(x+2i)(x+1), (x-2i)(2i+x)(x+1), (x-2i)(x+2i)(1+x), (x-2i)(2i+x)(1+x), (x+2i)(x+1)(x-2i), (2i+x)(x+1)(x-2i), (x+2i)(1+x)(x-2i), (2i+x)(1+x)(x-2i), (x+1)(x-2i)(x+2i), (1+x)(x-2i)(x+2i), (x+1)(x-2i)(2i+x), (1+x)(x-2i)(2i+x), (x-2i)(x+1)(x+2i), (x-2i)(1+x)(x+2i), (x-2i)(x+1)(2i+x), (x-2i)(1+x)(2i+x)

Question: Factor the polynomial below completely.

$$F(x) = x^3 + x^2 + 4x + 4$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: $(x + 1)(x + 2i)(x - 2i)$.

Question 24b of 25 (2 Factoring and Finding Roots of Polynomials 246603)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

Correct Answer: (x + 2)(x + i)(x - i), (x + 2)(i + x)(x - i), (2 + x)(x + i)(x - i), (2 + x)(i + x)(x - i), (x + i)(x - i)(x + 2), (i + x)(x - i)(x + 2), (x + i)(x - i)(2 + x), (i + x)(x - i)(2 + x), (x - i)(x + i)(x + 2), (x - i)(i + x)(x + 2), (x - i)(x + i)(2 + x), (x - i)(i + x)(2 + x), (x + i)(x + 2)(x - i), (i + x)(x + 2)(x - i), (x + i)(2 + x)(x - i), (i + x)(2 + x)(x - i), (x + 2)(x - i)(x + i), (2 + x)(x - i)(x + i), (x + 2)(x - i)(i + x), (2 + x)(x - i)(i + x), (x - i)(x + 2)(x + i), (x - i)(2 + x)(x + i), (x - i)(x + 2)(i + x), (x - i)(2 + x)(i + x)

Question: Factor the polynomial below completely.

$$F(x) = x^3 + 2x^2 + x + 2$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: $(x + 2)(x + i)(x - i)$.

Question 24c of 25 (2 Factoring and Finding Roots of Polynomials 246604)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 3

Is Case Sensitive: false

(x + 1)(x + 3i)(x - 3i), (x + 1)(3i + x)(x - 3i), (1 + x)(x + 3i)(x - 3i), (1 + x)(3i + x)(x - 3i), (x + 3i)(x - 3i)(x + 1), (3i + x)(x - 3i)(x + 1), (x + 3i)(x - 3i)(1 + x), (3i + x)(x - 3i)(1 + x), (x - 3i)(x + 3i)(x + 1),

Correct Answer: (x - 3i)(3i + x)(x + 1), (x - 3i)(x + 3i)(1 + x), (x - 3i)(3i + x)(1 + x), (x + 3i)(x + 1)(x - 3i), (3i + x)(x + 1)(x - 3i), (x + 3i)(1 + x)(x - 3i), (3i + x)(1 + x)(x - 3i), (x + 1)(x - 3i)(x + 3i), (1 + x)(x - 3i)(x + 3i), (x + 1)(x - 3i)(3i + x), (1 + x)(x - 3i)(3i + x), (x - 3i)(x + 1)(x + 3i), (x - 3i)(1 + x)(x + 3i), (x - 3i)(x + 1)(3i + x), (x - 3i)(1 + x)(3i + x)

Question: Factor the polynomial below completely.

$$F(x) = x^3 + x^2 + 9x + 9$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: $(x + 1)(x + 3i)(x - 3i)$.

Question 25a of 25 (2 Factoring and Finding Roots of Polynomials 156947)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 3

Question: Which of the following are possible rational roots of the polynomial? *Check all that apply.*

$$F(x) = 2x^2 - 3x + 7$$

Correct Answers:

	Choice

A.	$\pm\frac{1}{7}$
***B.**	± 1
***C.**	± 7
***D.**	$\pm\frac{1}{2}$
E.	± 2

Attempt	**Incorrect Feedback**
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: ± 1, ± 7, and $\pm\frac{1}{2}$.

Question 25b of 25 (2 Factoring and Finding Roots of Polynomials 246605)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 3

Question: Which of the following are possible rational roots of the polynomial? *Check all that apply.*

$$F(x) = 3x^2 - 3x + 5$$

Correct Answers:

	Choice
A.	± 3
***B.**	± 1
C.	$\pm \frac{1}{5}$
***D.**	± 5
***E.**	$\pm \frac{1}{3}$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: ± 1, ± 5, and $\pm \frac{1}{3}$.

Question 25c of 25 (2 Factoring and Finding Roots of Polynomials 246606)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 3

Question: Which of the following are possible rational roots of the polynomial? *Check all that apply.*

$$F(x) = 5x^2 - 3x + 3$$

Correct Answers:

	Choice
***A.**	± 3
***B.**	± 1
***C.**	$\pm \frac{1}{5}$
D.	± 5
E.	$\pm \frac{1}{3}$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: ± 3, ± 1, and $\pm \frac{1}{5}$.